Entropy generation of an Unsteady Hybrid Nanofluid's flow past a slandering stretching sheet

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ABSTRACT

This article investigated an unsteady, incompressible flow of two hybrid nanofluids over a stretching sheet by considering a variable thickness, magnetohydrodynamics, viscous dissipation, ohmic dissipation, thermal radiation effects, and entropy generation. The dimensional partial governing equations are transformed into nonlinear differential equations by similarity transfiguration. The most effective and powerful tool of the semi-analytical method HAM (Homotopy Analysis Method) can be used to solve the nanofluid flow model problem. The velocity, temperature, nanoparticle concentration, and entropy profiles are portrayed through graphs. Moreover, we examined the physical quantities of Skin friction, local Nusselt number, and local Sherwood number are displayed through tables. Also, the heat and mass transfer results are compared with previously published work.

Keywords: unsteady, viscous, ohmic, magnetic, activation energy, entropy, homotopy, skin friction, nusselt number, sherwood number